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PREDICTORS OF ACUTE KIDNEY INJURY FOR ELDERLY PATIENTS WHO UNDERGO CARDIAC PROCEDURE

Poster Contributions
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Background: Incidence of acute kidney injury (AKI) has increased significantly among older patients, particularly those who undergo cardiac intervention. Early diagnosis and management of this adverse event are necessary as development of AKI after cardiac intervention is associated with increased mortality and morbidity.

Methods: Patients age 60 and older who received any cardiac intervention with at least a 24-hour hospital stay within a single health care system during 2013 were retrospectively studied. AKI was determined if 2 serum creatinine measures were taken and had an absolute increase of 0.3 mg/dL or relative increase of 50% from baseline anytime during the hospital stay. Patients with <2 serum creatinine measures or chronic kidney disease stage III or greater were excluded from analysis. A logistic regression analysis for repeated measures was performed to determine the propensity of AKI development during the hospital stay after cardiac intervention.

Results: The final study sample comprised 1,675 patients (71.8±8.3 years, 63% male and 95% Caucasian) and over 1,830 interventions. Nearly 73% of interventions were catheter based, followed by bypass surgery (13.1%), cardiac valve surgery (9.3%) and bypass and valve surgery (4.7%). The incidence rate of AKI was significantly different across the various cardiac interventions (p<0.0001), with the highest rate among patients who had both bypass and valve surgery (36.3%) followed by valve surgery alone (28.5%), bypass surgery alone (16.3%) and catheterization (7.5%). Other factors associated with higher risk of AKI included history of dialysis (OR=4.70 (95% CI: 1.68-13.14); p=0.0215), diabetes (OR=1.45 (95% CI: 1.05-1.98); p=0.0265), congestive heart disease (OR=2.28 (95% CI: 1.64-3.15); p<0.0001), respiratory failure (OR=1.92 (95% CI: 1.28-2.88); p=0.0049) and abnormal blood urea nitrogen (OR = 1.39 (95% CI: 1.02-1.89); p=0.0438).

Conclusion: Older patients who undergo lifesaving cardiac interventions are at high risk of AKI, particularly those who need valve and bypass surgery. This study highlights the importance of continuous monitoring of older patients who undergo invasive surgeries and are at high risk of AKI.